that this is established recommended practice. An assurance was added that no harm would follow, provided environmental conditions did not encourage the dissemination of spores.

Remote from the bedside the euphemism for saturation resulting from incontinence is "condensation," and it has, apparently, long been known that the covers of certain best buy NHS mattresses provide uncertain protection against this and other forms of pollution. The mattresses themselves cannot be cleaned and are too costly to be destroyed. I am advised that it would be unhelpful to tell unsuspecting patients that when the beds they occupy become malodorous it is due to "natural condensation." It might offend the critical value—productivity divided by expenditure—in a business struggling desperately for survival and having already abandoned any pretensions of propriety.

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Hypophosphataemia in acute liver failure

SIR,—We can confirm and extend the finding of hypophosphataemia after paracetamol induced fulminant hepatic failure reported by Dr D J Dawson and colleagues (21 November, p 1312).

We reviewed data from 15 patients with acute hepatorenal failure after paracetamol self poisoning. There were nine women and six men with a mean age of 31 years (range 20-46); their mean prothrombin ratio was 4·9 (range 1·4-12·6) and serum creatinine concentration 468 μmol/l (range 67-817) on admission. Twelve were in grade 4 hepatic encephalopathy; 14 had a metabolic acidaemia on admission (base excess ≥18 mmol/l); 10 were hypokalaemic (serum potassium <3·5 mmol/l); and five were hypophosphataemic (serum phosphate <0·8 mmol/l); a further three subsequently developed hypophosphataemia. Seven patients died.

Several differences from the previous report emerge from our data. A serum creatinine concentration of >250 μmol/l did not prevent hypophosphataemia in six out of 12 patients. The cause of this hypophosphataemia is doubtless multifactorial; on admission it is probably due to metabolic acidosis secondary to tissue hypoxia.[1] Intracellular organophosphorus compounds break down in the presence of intracellular acidosis, and phosphate is lost in the urine.[2] After admission hypophosphataemia may develop because of the correction of the acid base state, the use of dextrose infusions to maintain euglycaemia,[3] and renal tubular damage.[4] Phosphate losses, however, may also occur because of the treatments undertaken for fulminant hepatic failure, of which high flux haemofiltration is perhaps the most important. Haemofiltration has been used recently to manage patients with fulminant hepatic failure, and ultrafiltrate losses are usually replaced with commercially available electrolyte replacement solutions which are phosphate free. Four of the authors' patients received haemofiltration, and in three the serum phosphate value fell further while the fourth remained severely hypophosphataemic. Only 15% of their patients required phosphate supplements, suggesting that in most patients the changes reflected intracellular shifts rather than total body depletion. Among our patients, however, most of those who developed hypophosphataemia (75%) also showed hypokalaemia,[5] suggesting, in the presence of a metabolic acidaemia (anion gap mean 22±2), that the intracellular pools were also reduced. Haemofiltration has become our preferred treatment in patients with hepatorenal failure.[6] We add potassium phosphate to potassium free haemofiltration replacement solution, both to correct hypophosphataemia on admission and to prevent its occurrence during treatment.

The role of hypophosphataemia in the development of hepatic coma is conjectural, but one of our cases suggests that it may be important.

A 40 year old woman was transferred in grade 3 coma with fulminant hepatic failure of unknown cause on a dextrose infusion regimen. On arrival she was conscious, but after two hours she suddenly deteriorated into grade 4 coma. She was ventilated and an intracranial pressure monitor was inserted. She subsequently suffered a cardiac arrest due to hypokalaemia (serum potassium 1·3 mmol/l, having been 2·2 mmol/l before transfer). She was resuscitated, supported with potassium and dextrose infusions, and started on continuous haemofiltration at an ultrafiltration rate of 1000 ml/h, the losses being replaced with commercially available replacement solution. She remained hypotensive with a normal intracranial pressure but suffered an asystolic cardiac arrest seven hours later when the serum potassium had been stabilised at 2·9 mmol/l. Serum phosphate estimations became available only after death; before transfer the value was 1·08 mmol/l, before the first cardiac arrest 0·23 mmol/l, and immediately before asystole 0·05 mmol/l. Both serum calcium and magnesium concentrations were normal. This patient was phosphate deficient. We believe that the neurological deterioration was related to the fall in the serum phosphate value and that death ensued because of the reduced phosphate value.

The practical implications of these findings are that acute renal failure and hypophosphataemia may coexist (often with hypokalaemia), that phosphate replacement should be considered during haemofiltration, and, perhaps most important, that clinicians should expect to request, and biochemists to provide, acute serum phosphate measurements in centres dealing with these metabolically complex patients.

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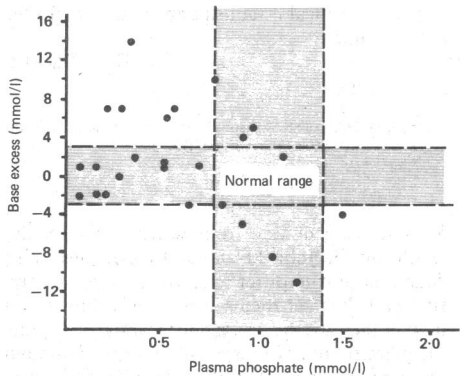
SIR,—Dr D J Dawson and others (21 November, p 1312) highlight the occurrence and frequency of hypophosphataemia in acute liver failure and the expected negative correlation with renal failure. The recognition of hypophosphataemia as a complication of acute liver failure and the concept that hypophosphataemia may be implicated in hepatic encephalopathy, however, are not new, having been described as early as 1972 by Knell and others.[1] They investigated 26 patients with acute liver failure and showed hypophosphataemia in 16. A negative correlation with base excess suggested that respiratory alkalosis was a contributory factor in its pathogenesis (figure). This frequency (62%) is identical with that reported by Dr Dawson and his colleagues.

In a recent further study we again found the same frequency (60%) of hypophosphataemia in 30 consecutive patients admitted to the liver failure unit in grade 3 or 4 coma. Survival in the seven patients with severe hypophosphataemia (<0·4 mmol/l) was similar to that in the other 23 patients (4 (57%) and 11 (47%) respectively). Although survival was similar in those patients with and those without hypophosphataemia, we would endorse the recommendation that serum phosphate concentrations should be measured routinely in this condition and severe hypophosphataemia corrected with intravenous phosphate.



Relation between hypophosphataemia and base excess. From Knell *et al*.[1]

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Responding flexibly but not gullibly to drug addiction

SIR,—The leading article by Dr John Strang and colleagues (28 November, p 1364) emphasising the need to respond to the individual addict rather than to the stereotype opens an unexpected door to reality. Furthermore, its encouragement of general practitioners to provide treatment to addicts is what the Association of Independent Doctors in Addiction has been saying all along.

It quotes a follow up study of those addicts who had been turned away by the clinics, which showed that all of them went on supporting and nourishing the criminal black market, though about half of them to a lesser extent than before.[1] The damage done to society by this black market in heroin is difficult to exaggerate. The Mafia's way into Britain to control this black market was cleared years ago with a change of policy by the clinics from one of relatively liberal prescribing to a rigid refusal to prescribe injectable drugs.

It is ironic that this leading article of hope should appear just at the time that Dr Ann Dally's persecution for flexible prescribing (having by this means weaned off drugs some dozens of injecting addicts of 10 to 30 years' standing) reaches new lengths. After the General Medical Council forbade her to prescribe any more controlled drugs to her addict patients she tried to get them taken on by the various NHS treatment centres and prescribed minor tranquillisers or painkillers such as a benzodiazepine or dihydrocodeine until they could be seen. For those patients who were turned down by the clinics and also for those who could not bring themselves to reattend particular clinics she did the same.

Now, I understand, the police have been asked to bring a criminal prosecution against her for such prescribing. (How many doctors know that a benzodiazepine is technically a controlled drug?) It is incomprehensible to me except in the context of

a type of medical establishment that I would feel ashamed about.

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1 Strang J, Heathcote S, Watson P. Habit moderation in injecting drug addicts. *Health Trends* 1987;19:16-8.

SIR,—A vein of rich irony suffuses the leading article by Dr John Strang and colleagues. They define those who differ from them as polar opposites and then set themselves up as arbiters even though they are the protagonists who have created the polarisation. No responsible source has advocated maintenance for all, nor indeed do drug takers want that.[1] Where is there evidence that those who do prescribe maintenance do not also offer detoxification, withdrawal, or a host of other alternatives?

The authors' assertions about the "passionate preaching of zealots" also miss the point completely. Most drug users do not see themselves as in need of "treatment" any more than most tobacco users do (J H Willis, Royal College of Psychiatrists meeting, 1986) and the question is how to deal with this majority of drug users and their effects on society. Dr Strang and Professor Ghodse themselves inveigh against prohibition in the latest report of the Royal College of Psychiatrists,[2,3] but if prohibition is ended, as they imply, how are drugs to be controlled?

The empirical picture of drug use demands flexible, pragmatic management. To remain empirical, rigorous evaluation is essential and in the Mersey region this has been carried out.[3] Of a sample of 1019 patients, 9% receive maintenance prescriptions of injectable drugs and a further 25% receive syrup of methadone, subject to dissuasion, health care, advice, and counselling; 51% get no drugs at all. Further studies will judge the outcome of these policies. This is far from "all get maintenance." In contrast, the 55 drug users in Strang's quoted study continued breaking the law and risking their own and others' health using dangerously adulterated illicit drugs, from which only criminals profit. That some patients moderate their habits is the natural history of drug use, but even greater positive findings without the attendant risks can be achieved with maintenance—for example, of Dally's cases all but four reduced their dose and none increased their dose.[4] The drug takers in the study by Gossop *et al*, who agreed to admission for three weeks in a psychiatric unit, were a highly selected group and unrepresentative of drug takers as a whole. Furthermore, they were studied an average of 11 years after they started taking drugs. This suggests they were probably nearing the end of the "addictive set"[5] and may have got better in spite of treatment not because of it. Even so, seven of the 57 failed to complete the inpatient programme, and only 12 of the 57 were drug free at six months and we do not know what has happened to these 12 since. This is better than the spontaneous remission rate of 5% per year but poor considering this was a highly motivated group, ready to give up.

Dr Strang and colleagues are right that general practitioners need to be more involved, but the *Guidelines of Good Clinical Practice* have had the opposite effect: some even feel they have been used as an instrument to arraign doctors for heterodox practice.[6,7] The problem is that the guidelines do not address one of the most salient features of the natural history of addiction: that despite any intervention an addict remains addicted for several years. Maintenance has a place in managing such patients, but no guidance is given on this important tool in reducing harm.

Although maintenance prescribing is not "treatment," it permits rehabilitation; anyway, the distinction between treatment and rehabilitation is arbitrary and can be counterproductive.[8] Whatever policies are pursued evaluation helps establish their bases. Finally, your leader writers create another opposition: who decides treatment, doctor or patient? Why not doctor and patient?

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Supplies of anti-Rh(D)

SIR,—The policy for administration of Rh(D) immunoglobulin for threatened miscarriage in rhesus negative women was clearly established in 1976 and endorsed in 1981. As far as we are aware, the only dissension in 1981 revolved round the suggestion and practicability of using the Kleihauer test in cases of threatened abortion.

Certainly full implementation of the agreed policy requires that if they have not already done so general practices need to develop ready access to Rh(D) immunoglobulin from their local blood banks, possibly even keeping a small stock themselves if they are to provide an effective domiciliary service. As Dr Deane Collinge says (28 November, p 1415), at its outset this may necessitate short term redistribution of the nation's supply.

Although strenuous efforts are being made to improve supplies of anti-D immunoglobulin, at present there is barely enough for standard prophylaxis as defined. Therefore, it would not be practical for general practices to hold large stocks because much anti-D would then be out of circulation.

None the less, the present supply difficulties should not detract from the longer term aim of providing immunoglobulin nationwide, for miscarriages as well as postnatally and, in time, even antenatally, to keep avoidable Rh(D) sensitisation to a minimum.

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SIR,—Until comparatively recently England and Wales were able to provide enough anti-Rh immunoglobulin for their own needs. The amount of plasma containing anti-Rh collected by the National Blood Transfusion Service has, however, been decreasing, and recently, when most of the anti-D stocks of plasma had to be discarded owing to contamination by plasma donations from a donor who developed a soft tissue sarcoma, the shortage was such that it became necessary to buy anti-Rh immunoglobulin from abroad. Dr J Dean Collinge referred to the effects of that shortage.

Experience at the North London Blood Transfusion Centre indicates that it would be easy to increase the procurement of plasma containing anti-Rh in England and Wales to a self sufficient level. Before the recent shortage arose the north London centre was already providing about 20% of all the plasma containing anti-Rh sent to the Blood Products Laboratory. When it became clear that a national shortage was imminent procurement was increased.

Between December 1986 and May 1987, in screening almost 100 000 donors, 202 with anti-D were found. After explanation of the need for plasma containing anti-Rh about 150 of the subjects agreed to participate. After women of childbearing age had been rejected about 100 subjects were available for restimulation. They were asked to have a blood sample taken by their general practitioner so that the presence of anti-Rh(D) could be confirmed and the red cells tested for S, s, K, Kp^a, Fy^a, Fy^b, Jk^a, Jk^b, Le^a and Le^b.

Blood was received from 66 subjects; for 60 of these accredited donors whose red cells were compatible for the above antigens were available. After detailed explanations 42 of the 60 agreed to receive injections of Rh positive red cells and to undergo plasmapheresis subsequently.

Intravenous injections of up to 1 ml of red cells were given at intervals of not less than two weeks until the level of anti-D exceeded 100 IU/ml (20 μg/ml). Donations of plasma were then obtained every two to three weeks. The total amount of anti-D collected from October 1986 to September 1987 was $69{\cdot}4 \times 10^6$ IU, whereas only 40×10^6 IU had been collected during 1985.

In October 1985 the anti-D working party of the National Blood Transfusion Service estimated the annual requirement of anti-Rh immunoglobulin for routine postnatal prophylaxis to be $80\,000 \times 500$ IU doses per year—that is, 40×10^6 IU. When the 250 IU doses required for immunoprophylaxis are taken into account the total annual requirement is estimated to be 54×10^6 IU. As the yield of anti-D immunoglobulin from plasma is only about 25%, the amount of plasma containing anti-Rh required annually is about 216×10^6. The amount collected at our centre between October 1986 and September 1987 was thus about one third of the total requirement for England and Wales. Since the population from which we obtained the anti-Rh was 3·4 million and the total population of England and Wales is about 50 million, the amount of anti-Rh which could be obtained annually as plasma by measures similar to those we have adopted can be estimated to be 1×10^9 IU, or five times the total requirement for England and Wales when anti-Rh immunoglobulin is given only postnatally. This amount would in fact also be sufficient for routine antenatal immunoprophylaxis, assuming that two doses of 500 IU are given antenatally to all previously unimmunised Rh-negative women. In fact there would be more than enough anti-Rh immunoglobulin if the two doses given antenatally were reduced to 250 IU (50 μg) each.

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Brief intervention by general practitioners against smoking

SIR,—The study by Dr M A H Russell and others (14 November, p 1240) indicates that brief intervention by a general practitioner with smokers is no more effective than doctors' usual care and that more intensive intervention is required. This is